

Claims:

1. A distributed search method in a peer-to-peer computer network comprising a resource requestor, at least one search broker, and at least one resource provider where said at least one search broker has a registration database for said at least one resource provider, said method comprising:

- 1. sending a resource query from said resource requestor; to a resource broker;
- 2. locating a resource provider on the network matching said resource query;
- 3. sending said resource query from said resource broker to said resource provider matching said resource query;
- 4. processing said resource query at said resource provider matching said resource query;

and

- 5. returning search results from said resource provider matching said resource query to said resource requestor.

2. The method of Claim 2 further comprising locating one or more search brokers in said computer network.

3. The method of Claim 2 further comprising forwarding a resource description from said resource provider to said resource broker.

4. The method of Claim 3 further comprising ranking said search results at said resource requestor.

5. The method of Claim 4 wherein said resource description comprises types of resources.

6. A computer program product for use in conjunction with a distributed network comprising a resource requestor, at least one search broker and at least one resource provider, the computer program product comprising a computer readable storage medium and a computer program mechanism embedded therein, the computer program mechanism comprising:

- 1. first instructions for sending a resource query executable by said resource requestor;

second instructions executable by said search broker for registering said resource provider;

third instructions executable by said search broker for finding said resource provider matching said resource query;

fourth instructions executable by said search broker for sending said resource query to said resource provider; and

fifth instructions executable by said resource provider for finding resources available matching said resource query.

7. The computer program product of Claim 6 further comprising

sixth instructions executable by said resource provider for sending search results to said resource requestor.

8. The computer program product of Claim 7 further comprising

seventh instructions executable by said resource provider for finding search brokers in said computer network.

9. The computer program product of Claim 8 further comprising

eighth instructions executable by said resource provider for obtaining a resource description.

10. The computer program product of Claim 6 further comprising

ninth instructions executable by said resource provider for sending a resource query to a computer coupled to said resource provider.

11. A resource search method for a computer network having a plurality of computers comprising a resource requestor, at least one search broker, and at least one resource provider, said method comprising:

registering said resource provider with said search broker;

sending a resource query from said resource requestor to said search broker;

sending said resource query from said search broker to said resource provider;

searching said resource provider for local resources based on said resource query; and

8 sending search results from said resource provider to said resource requestor.

1 12. The search method of Claim 11 further comprising

2 sending said resource query from said resource provider to a computer coupled to said  
3 resource provider.

1 13. The search method of Claim 11 further comprising

2 generating at said search broker a registration database for said resource provider.

1 14. The search method of Claim 13 further comprising

2 determining whether said resource provider contains a resource that matches said  
3 resource query.

1 15. The search method of Claim 14, wherein said resource query comprises

2 a keyword.

1 16. The search method of Claim 15 further comprising selecting said resource

2 provider based on said keyword of said resource query.

1 17. A computer program product for use in conjunction with a distributed network

2 comprising a resource requestor, at least one search broker and at least one resource provider, the  
3 computer program product comprising a computer readable storage medium and a computer  
4 program mechanism embedded therein, the computer program mechanism comprising:

5 first instructions for registering said resource provider with said search broker;

6 second instructions for sending a resource query from said resource requestor to said  
7 search broker;

8 third instructions for sending said resource query from said search broker to said resource  
9 provider;

10 fourth instructions for searching said resource provider for local resources based on said  
11 resource query; and

12 fifth instructions for sending search results from said resource provider to said resource  
13 requestor.

18. The computer program product of Claim 17 further comprising sixth instructions for sending said resource query from said resource provider to a computer coupled to said resource provider.

19. The computer program product of Claim 17 further comprising sixth instructions for generating at said search broker a registration database for said resource provider.

20. The computer program product of Claim 19 further comprising seventh instructions for determining whether said resource provider contains a resource matching said resource query.

21. The computer program product of Claim 20 wherein said resource query comprises a keyword.

22. The computer program product of Claim 21 further comprising eighth instructions for selecting said resource provider based on said keyword of said resource query.

23. The computer program product of Claim 22 further comprising ninth instructions for ranking said search results at said resource requestor.

24. A computer network having a plurality of computers comprising a resource requestor, at least one search broker, and at least one resource provider, each computer on said computer network comprising an application programming interface (API), said API comprising:  
a resource-finding method executable by said resource requestor, said resource-finding method comprising a resource query;

a resource-provider-finding method executable by said search broker for finding said resource provider matching said resource query,

a resource-provider-registering method executable by said search broker for registering said resource provider; and

a local-resource-finding method executable by said resource provider for finding

resources available on said resource provider.

25. The computer network of Claim 24 wherein said API further comprising:  
a search broker finding method executable by said resource provider for finding said  
search broker.

26. A resource search method for a computer network having computers comprising a  
resource requestor, a plurality of search brokers, and a plurality of resource providers, said  
method comprising:

registering said plurality of resource providers with said plurality of search brokers;  
sending a resource query from said resource requestor to at least a subset of said plurality  
of search brokers;  
sending said resource query from said subset of said plurality of search brokers to at least  
a subset of said plurality of resource providers;  
searching for local resources based on said resource query; and  
sending search results from said subset of said plurality of resource providers to said  
resource requestor.

27. The search method of Claim 26 further comprising  
sending said resource query from a resource provider to a computer coupled to said  
resource provider.

28. The search method of Claim 26 further comprising  
generating at said plurality of search brokers registration databases for said plurality of  
resource providers.

29. The search method of Claim 28 further comprising  
determining whether said subset of said plurality of resource providers contains a  
resource that matches said resource query.

30. The search method of Claim 29, wherein said resource query comprises  
a keyword.

31. The search method of Claim 30 further comprising selecting a resource provider based on said keyword of said resource query.

32. A computer program product for use in conjunction with a distributed network comprising a resource requestor, a plurality of search brokers and a plurality of resource providers, the computer program product comprising a computer readable storage medium and a computer program mechanism embedded therein, the computer program mechanism comprising: first instructions for registering said plurality of resource providers with said plurality of search brokers; second instructions for sending a resource query from said resource requestor to at least a subset of said plurality of search brokers; third instructions for sending said resource query from said subset of said plurality of search brokers to at least a subset of said plurality of resource providers; fourth instructions for searching for local resources based on said resource query; and fifth instructions for sending search results from said subset of said plurality of resource providers to said resource requestor.

33. The computer program product of Claim 32 further comprising sixth instructions for sending said resource query from a resource provider to a computer coupled to said resource provider.

34. The computer program product of Claim 32 further comprising sixth instructions for generating at said plurality of search brokers registration databases for said plurality of resource providers.

35. The computer program product of Claim 34 further comprising seventh instructions for determining whether said subset of said plurality of resource providers contains a resource that matches said resource query.

36. The computer program product of Claim 35 wherein said resource query comprises a keyword.

- 1           37.     The computer program product of Claim 36 further comprising eighth instructions
- 2     for selecting a resource provider based on said keyword of said resource query.

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